UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,847	09/19/2003	C. Dominique Toran-Allerand	0575/66236/JPW/AJM/DNS	8389

7590 04/05/2007

John P. White
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, NY 10036

EXAMINER	
BASI, NIRMAL SINGH	
ART UNIT	PAPER NUMBER
1646	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/665,847	TORAN-ALLERAND, C. DOMINIQUE	
	Examiner	Art Unit	
	Nirmal S. Basi	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) *1-9 and 14-41* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 September 2003* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/28/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election with traverse of Group IV claims 10-13 on 12/11/06 is acknowledged. The traversal is on the ground(s) that it would not be a serious burden to examine the entire groups together. This is not found persuasive because the groups are independent and distinct for reason of record. A search of groups I-XI would not be co-extensive with regard to the literature search for reasons of record. An examination of the materially different, patentably distinct inventions in a single application would constitute a serious undue burden on the examiner. Claims 1-9, and 14-41 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
The requirement is still deemed proper and is therefore made FINAL.

2. ***Sequence Rules Compliance***

This application fails to comply with the sequence rules, 37 CFR 1.821-1.825. Nucleotide and polypeptide sequences must be identified with the corresponding SEQ ID NO. Title 37, Code of Federal Regulations, Section 1.821 states "reference must be made to the sequence by use of the assigned identifier", the identifier being SEQ ID NO. Sequences in the specification must be identified by their corresponding SEQ ID NO:. For example see page 31. Compliance with sequence rules is required.

3. Applicant has used the heading "Brief Description of the Figures", it must be amended to Brief Description of the Drawings. The description of the drawings objected to because each Figure must described as number followed by the letter descriptor. For example, Figure 1 should be described as "Figures

1A-1C" and then each of A, B and C described separately or the equivalent, as required by 37 C.F.R. § 1.84. Appropriate correction is required for all the Figures, Figure 1 is provide as an example.

Claim Rejection, 35 U.S.C. 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10 and 12 are indefinite because they depend on a cancelled claim

Claim 11 and 13 are indefinite because they depend indefinite claims 10 and 12 respectively.

Claims 10-13 are indefinite because it is not clear what is the structure of the cell surface of estrogen receptor so as to allow the metes and bounds of the claim to be determined. It is not clear what epitope is in common with ER-alpha that confers the functional properties required for the receptor functionality and ability to be cell-surface associated.

Claim Rejection, 35 U.S.C. 112, first paragraph

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10-13 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for determining whether an agent is an agonist or antagonist of the one species of the plasma membrane associated estrogen receptor (ER-X) defined in the specification by specific immunoprecipitation, western blotting, light and electron microscopy, ligand binding and molecular weight, does not reasonably provide enablement for a receptor which is loosely defined by steps a-c of claim 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claims 10-13 recite a method for determing whether an agent is an agonist or antagonist of cell-surface estrogen receptor defined by having:
a) a non-stereospecific binding affinity for 17d-estradiol and 17alpha estradiol;
(b)at least one epitope in common with the ligand-binding domain of ER-alpha;
(c)increased presence at caveolar or caveolar-like microdomains of cells on which the receptor is present.

The structure and functional limitation of a-c above do not sufficiently define the novel estrogen receptor ER-X. In a) the specific binding affinity of ER-X for a specific ligand is not disclosed. In b) the structure of the epitope that must be present in ER-X that is critical for functionality is not disclosed. The presence of the receptor in a specific location provides no structure for the ER-X. The specification discloses, "The theoretical existence of membrane ERs has been suggested in the literature for the past twenty-five years (Anuradha, 1994;

Pietras, 1977; and Watson, 1999). However, to date, no conclusive evidence has demonstrated whether these theoretical membrane ERs exist as a small subpopulation of both ER-α (Watson, 199-9) or ER-β, or in fact represent novel members of the ER family (Das, 1997; and Gu, 1999). Singh et al. and Toran-Allerand have suggested that. an estrogen receptor subtype, designated "ER-X", would be expected to exist in neocortical cells, but have provided no characterization of this suggested entity (Singh, 1999; Singh, 2000; and Toran-Allerand, 2000)" Applicants have identified a new receptor, ER-X, by a complex set protocol disclosed on page 32-37. Applicants have one ER-X receptor with specific functional characteristics but the claims as written encompass many species of the receptor because of the description of the ER-X. The instant fact pattern is similar to that in *In re Hyatt*, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983), wherein a single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification at most disclosed only those means known to the inventors. When claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure or technique (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. See also *Fiers v. Sugano*, 984 F.2d 164, 25 USPQ2d 1601 (Fed. Cir. 1993), and MPEP § 2164.08(a). The specification discloses that a specific ER-X needs to be present in order to determine agonistic or and antagonistic activity. The specification also discloses specific conditions are required to isolate the ER-X. However, the

claims fail to recite all the limitations that either defines the ER-X so that the skilled artisan can know its structure or sufficient limitations to purify the ER-X, and thus the skilled artisan would have to resort to trial to identify or purify the polypeptides encompassed by the claimed method. At the time of the invention, the state of the art established that ER-X was novel with no known defined structure or means for isolation and purification. While it is known in the art that proteins can be purified using various conditions and purification schemes, they requires specific conditions and specific purification schemes to achieve high yields, purity and functional protein.

Due to the large quantity of experimentation necessary to isolate other members of the ER-X family because of the lack of direction/guidance presented in the specification regarding specific conditions other than those recited in claims 10-12, the absence of working examples directed to same, the complex nature of the invention, the state of the prior art which establishes the unpredictability of the effects of specific conditions on protein purification, and the breadth of the claims which fail to specifically define s ER-X, undue experimentation would be required of the skilled artisan to make and/or use other species of ER-X in the claimed invention in its full scope.

7. No claim is allowed.

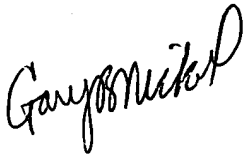
Advisory

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirmal S. Basi whose telephone number is 571-272-0868. The examiner can normally be reached on 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol can be reached on 571-272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nirmal S. Basi
Art Unit 1646



GARY B. NICKOL, PH.D.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600